PMS22
DISEASE BURDEN OF RHEUMATOID ARTHRITIS IN TAIWAN: A POPULATION-BASED ANALYSIS
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OBJECTIVES: Rheumatoid arthritis (RA) is a chronic autoimmune disease characterized by inflammation and destruction of the joints. It is associated with decreased quality-of-life in its patients, and pharmacological and non-pharmacological treatments are available. The research aims to estimate the economic burden of RA in Taiwan. **METHODS:** The National Health Insurance Research Database (NHIRD), a claims-based dataset encompassing 99% of Taiwan's population, was applied. We used a micro-costing approach for direct health care costs and indirect social costs by estimating the quantities and prices of cost categories. Direct costs included surgeries, hospitalizations, medical devices and materials, lab tests, and drugs. The costs and quantities of the direct economic burden were calculated based on 2011 data of NHIRD. We identified RA patients and a control cohort matched 1:4 on demographic and clinical covariates to calculate the incremental cost related to RA. Indirect costs were evaluated by absenteeism and presenteeism, which is the decreased productivity of patients. For the indirect burden, we estimated the rate of absenteeism and presenteeism from a patient survey and the average salary from official statistics. Costs were presented in 2013 USD (1 USD = 29.65 TWD). **RESULTS:** A total of 41,269 RA patients were included in the database with incremental total direct cost of $80,303,920 and indirect cost of $105,320,943. This resulted in an average incremental direct cost of $1,946 per RA patient. Within direct costs, the largest burdens were associated with drugs ($66,794,948; 83.2%), lab tests ($7,563,247; 9.4%), and hospitalizations ($3,128,309; 3.9%). For indirect costs, absenteeism costs and presenteeism costs were $12,975,857 (12.3%) and $92,345,085 (87.7%), respectively. **CONCLUSIONS:** The economic burden of RA in Taiwan is driven by indirect health care costs, most notably, presenteeism. Efficient management of RA can improve the health status and quality of life, indeed, reduce the economic impact.

PMS23
COST-OF-ILLNESS STUDIES FOR JUVENILE IDIOPATHIC ARTHRITIS: A SYSTEMATIC REVIEW
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OBJECTIVES: Juvenile idiopathic arthritis (JIA) is the most common rheumatic disease in children, affecting 1 in 1000. Treatment is shifting to more costly drugs and no recent review is available that summarizes all costs for JIA. We aimed to summarize all cost-of-illness studies for JIA. **METHODS:** MEDLINE and EMBASE were searched from inception to December 2013, using terms for cost-of-illness and arthritis. Review articles were also examined. Studies that were not published in English were excluded. Data extracted included perspective, data sources, analysis, number of subjects, costs and year reported. Purchasing power parities from the Organization for Economic Co-operation and Development were used to convert costs into United States dollars and the medical component of the US Consumer Price Index was used to convert costs to constant US dollars (2012). Data are presented as cost per person per year. **RESULTS:** The search yielded 510 unique studies. Nine relevant studies were identified with data from 1,340 patients with JIA. Studies were conducted in Europe (n=5), Canada (n=2), United States (n=1) and Turkey (n=1). Five studies surveyed patients' families; 2 used medical records; 2 used both. Six studies reported mean direct medical costs; range: $3,304 to $20,613. Six reported mean patient/parent time costs; range: $112 to $5,346. Drug costs were $4,665 to $14,850 for studies that included newer biologic drugs (n=2) versus $353 to $1,158 for those without (n=2); direct medical costs were $5,140 to $17,633 for those with biologic drugs (n=3) versus $3,304 to $20,613 for those without (n=4). There was inconsistency in how costs were reported. **CONCLUSIONS:** The economic impact of JIA is considerable. Newer biologic drugs impact cost-of-illness estimates and must be considered when interpreting this information. Current data largely reflects European and North American costs. More research will assist policy developers and decision makers.

PMS24
A MODELLING FRAMEWORK TO ASSESS THE BURDEN OF SPINAL DISEASE
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OBJECTIVES: Low back pain is a common cause for hospital visits and imposes considerable societal costs and loss of quality of life. However, although many patients present with symptoms, the vast majority recover after minimal conservative care, while a small proportion requires expensive surgical interventions. The objective of this model is to create a framework to assess the cost-effectiveness of alternative treatments for lumbar spinal diseases and to assess the burden of spinal diseases at different stages. **METHODS:** A generic treatment pathway was constructed based on a literature review and iterative interaction with an international expert panel of orthopaedic specialists. The pathway starts at the point of clinical presentation and follows the patient throughout the course of the disease. The model consists of a decision tree structure with Markov cohort models at the end of each branch. The model follows patients through a range of health care options and outcomes; remittances to specialists, surgery, and persistence or resolution of symptoms. Death unrelated to back condition is accounted for. The model was populated with Swedish data, complemented with other literature and expert opinion. **RESULTS:** An example of the model's results is the cost distribution over the treatment pathway. Of the total simulated cost, 85% is associated with patients who do not undergo surgery, with the remaining costs attributable to patients who undergo surgery at some point during the course of the disease. Within the latter group, stenosis was found to be the diagnosis associated with the highest total costs. **CONCLUSIONS:** The treatment pathway for low back pain has not been modelled in such a comprehensive manner before. However, the model demands detailed data not currently available in most countries. There is a need of further data collection to be able to provide more reliable estimates for the burden of spinal disease.

PMS25
THE BURDEN OF ILLNESS OF OSTEOPOROSIS PATIENTS IN THE UNITED STATES MEDICARE POPULATION
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OBJECTIVES: To examine the economic burden and health care utilizations of osteoporosis in the U.S. Medicare population. **METHODS:** Osteoporosis patients were identified (International Classification of Disease, 9th Revision, Clinical Modification [ICD-9-CM] code: 733.0x) from the U.S. national Medicare claims dataset from January 1, 2008 through December 31, 2010. The first osteoporosis diagnosis date was designated as the index date. One-year continuous enrollment was required for all patients pre- and post- index date. Charlson Comorbidity Index (CCI) scores and comorbid conditions in the 1-year baseline period were examined. Treatment patterns within 60 days post-index date, and health care utilization and costs for the follow-up period were analyzed descriptively. **RESULTS:** A total of 141,833 patients (average age 78.1 years) were included in the study sample. Osteoporosis patients in the Medicare population were more likely to be female (88.9%), White (88.4%) and reside in the Southern U.S. region (38.7%). The average CCI score was 1.80. Comorbid conditions were common, including tumor (28.0%), diabetes (25.0%) and chronic obstructive pulmonary disease (23.8%). Osteoporosis patients had a high percentage of prescriptions for alendronate sodium (12.0%), levothyroxine sodium (10.9%) and simvastatin (9.0%) within 60 days post-index date. Health care utilizations analysis showed the following results: Medicare carrier (99.4%), Durable Medical Equipment (DME, 36.9%), Home Health Agency (HHA, 18.5%), outpatient visits (81.6%) and inpatient hospital (29.6%), Skilled Nursing Facility (SNF, 12.3%) and hospice admissions (4.2%) and drug prescription drug claims (part D event) (56.3%). Health care costs for osteoporosis patients were determined as follows: Medicare carrier ($4,387), DME ($393), HHA ($1,126), outpatient ($10,836), inpatient ($5,728), SNF ($2,363), hospice ($445), pharmacy ($1,736) and total costs ($27,013). **CONCLUSIONS:** Patients diagnosed with osteoporosis in the Medicare population have a high percentage of carrier and outpatient visits. The current study evidenced that high health care utilizations result in considerable expenditures.

PMS26
EVALUATION OF ECONOMIC BURDEN AND HEALTH CARE UTILIZATIONS FOR UNITED STATES MEDICARE PATIENTS WITH RHEUMATOID ARTHRITIS
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OBJECTIVES: To examine the economic burden and health care utilizations of rheumatoid arthritis (RA) patients in the U.S. Medicare population. **METHODS:** The study sample was extracted from the national Medicare claims data from 2008 to 2010. All patients diagnosed with RA were identified using International Classification of Disease, 9th Revision, Clinical Modification (ICD-9-CM) diagnosis code 714.0x. The initial RA diagnosis date was designated as the index date. Comorbid conditions during the 12-month pre-index (baseline) period, and treatment patterns within 60 days post-index date were examined. Health care utilization and costs were assessed for each Medicare research identifiable file (RIF) for the 12-month post-index (follow-up) period. Inflation was adjusted to 2010 U.S. dollars. **RESULTS:** Out of the 21,910 identified patients, 74.5% were male and 81.1% White. RA patients had a mean age of 76.8 years, and were more likely to reside in the Southern U.S. region (37.7%). The baseline Charlson Comorbidity Index score was 2.27. The most commonly diagnosed comorbid conditions included diabetes (34.1%), chronic obstructive pulmonary disease (29.3%) and tumor (28.2%). Hydrocodone bitartrate/acetaminophen (14.7%), levothyroxine sodium (11.7%) and furosemide (10.7%) were the most often prescribed medications for RA patients. Health care utilizations were examined including proportion of patients with Medicare carrier visits (99.0%), Durable Medical Equipment (DME, 47.0%), Home Health Agency (HHA, 25.5%) use, outpatient visits (79.5%) and inpatient hospital (36.1%), Skilled Nursing Facility (SNF, 12.7%) and hospice admissions (4.4%) and prescription drug (part D event) claims (59.3%). RA patients incurred significant Medicare carrier ($5,919), DME ($640), HHA ($1,814), outpatient ($13,916), inpatient ($7,977), SNF ($2,389), hospice ($457), prescription drug ($2,299) and total costs ($35,412). **CONCLUSIONS:** RA patients were associated with more Medicare Carrier service use and outpatient visits, in addition to frequent comorbid condition diagnoses, which resulted in higher health care expenditures.

PMS27
WHAT DETERMINES WORK PRODUCTIVITY LOSS IN RHEUMATOID ARTHTIRIS (RA), CROHN'S DISEASE (CD) AND PSORIASIS (PS) IN POLAND? RESULTS OF MOVE TO WORK (M2W) STUDY
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OBJECTIVES: Assessment of productivity loss caused by RA, CD and psoriasis and comparison differences in Poland. **METHODS:** The participants of the M2W study were consecutive patients with diagnosed RA, psoriasis and CD, in productive age (women 18-60, men 18-65), recruited at regionally stratified sample of 89 outpatient centers (rheumatology, dermatology or gastroenterology). 814 RA, 464 CD and 822 Ps patients with dominantly low or moderate disease activity were assessed. Productivity loss was measured using Work Productivity and Activity Impairment (WPAI) questionnaire which included presenteeism, absenteeism and overall work